

## Alabama Disasters: Leveraging NASA EOS to Explore the Environmental and Economic Impact of the April 27 Tornado Outbreak

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The disastrous tornado outbreak in Alabama on April 27, 2011 greatly impacted the economy of the state. On record, the tornado outbreak was the second deadliest tornado outbreak in U.S. When considering the agricultural and value-added activities such as food and timber processing, farm inputs, manufacturing, transportation, and retail sales, the dollar value of Alabama agribusiness annually exceeds \$40 billion (NASS, 2011). This research aims to examine how the timber and agriculture damage affected the state economy of Alabama and will be used to aid in long-term economic recovery. ASTER imagery was used along with ground-truthed NASS (National Agriculture Statistics Service) crop location records to verify the economic impact tornadoes had on the agricultural economy of the state. This swath damage can be calculated by correlating tornado path with NASS statistics on crop yield, precisely showing the fields affected and dollars lost to this disaster. Not only can this be executed manually using ENVI and ArcGIS, but also through the use of Python, a programming language that has the ability to automate the process, creating a product for initial damage assessment.